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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/715,540

11/19/2003

John West

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EXAMINER

CARIASO, ALAN B

ART UNIT

PAPER NUMBER

2885

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/715,540

Applicant(s)

WEST ET AL.

Examiner

Alan Cariaso

Art Unit

2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2,4,19-32 and 38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 is/are allowed.
- 6) ☒ Claim(s) 2,19-32 and 38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. Receipt of applicant's amendment filed November 16, 2006 is acknowledged. Claims 2, 4, 19-32 and 38 are pending. Claims 2, 19, 20 and 22 are amended. Claim 38 is newly submitted.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2, 19-32 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. In regards to claim 2, which recites "*the light pipe comprises a proximal end ..., wherein the proximal end of the light pipe is distal to the at least one reflector*" has no clear support in the specification. The light pipe being claimed to be constructed of single continuous homogeneous material with the entrance area, lens and reflector, would not clearly suggest a proximal end of the light pipe, because it may mean a discontinuity and lack of homogeneity in the light guide. No apparent demarcation is described nor is illustrated (fig.7 appears to best represent claim 2) to show the claimed

proximal end of the light pipe distal to the reflector. Furthermore, there is no relative sense as to what the proximal end of the light pipe is proximal. If the distal end of the light pipe is sized to be placed inside a patient's mouth, it is not clear how the opposite proximal end of the light pipe would be relatively *distal to the at least one reflector*, as claimed, wherein any conceivable proximal end of the light pipe would appear to be proximal to the reflector.

5. In regards to claims 19 and 22, the commonly claimed *"and wherein the light guide further comprises a straight wall section immediately distal to the reflecting means"* does not have clear support from the written specification. The figures 3 and 6-9 show "straight" cylindrical walls (at least straight in the longitudinal section) defined by a substantial section of the light guide that is not specified to be limited to being distal or immediately distal to the reflector, as claimed in claims 19 and 22. The light guide appears also "straight", proximal to the reflector. Claims 20, 21 and 23-32 depend on claims 19 and 22.

6. In regards to claim 38, the claimed *"housing"* and *"the distal end of the light pipe is not enclosed by the housing"* are considered new matter not supported by the specification as originally filed. Furthermore the latter negative limitation appears to claim something the prior art to Bianchetti does not have, instead of what structure defines the claimed invention over the prior art.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 2, 19-24 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by BIANCHETTI et al (US 6,857,873 B2).

9. As best understood of claim 2, BIANCHETTI discloses a light guide (optical element 40, figs.1-4B & 7) for use in a dental curing device (col.2, line 52 to col.3, line 2), the light guide (40) comprising an entrance area (seat 41), a lens (convex wall 42, col.5, lines 15-20), at least one reflector (43, col.5, lines 21-29) *and* a light pipe (*cylindrical section 46, fig.3, col.5, line 48*) wherein the lens (42), at least one reflector (43), *and light pipe (46)* are constructed of a single continuous homogeneous material (col.4, line 56 to col.5, line 9) and wherein the *light pipe (46) comprises a proximal end (cusp where 45 meets 46, fig.3) and a distal end (47 or 48 or 49), wherein the proximal end (cusp of 45 and 46) of the light pipe (46) is distal to the at least one reflector (43) and wherein the distal end (47,48,49) of the light pipe is sized to be placed inside a patient's mouth, either with removal of optical fiber (50, col.4, lines 11-14) and directing the exit area (48) in the mouth, or with the attached optical fiber (50) defining its exit area directed into the mouth (col.3, lines 8-13), such that light is projected onto a single*

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tooth (col.2, line 62 to col.3, line 2 or col.1, lines 25-29) and wherein the light guide (40) consists of single material selected from the group consisting of acrylic, plastic and glass (col.2, lines 56-57).

10. As best understood of claims 19-24 and 29-31, BIANCHETTI discloses a light guide (optical element 40) for use in a dental light curing device (col.2, line 52 to col.3, line 2), the light guide (40) comprising: a proximal end (seat 41) and distal end (48), wherein the proximal end (41) is designed to receive light from a light source (LED 30) and wherein the proximal end comprises: a reflecting means (43), a refracting means (42), wherein the reflecting means (43) is concave (fig.3) to the light source (30) and reflects light (col.5, lines 26-29) from the light source (30) towards the distal end (48) of the light guide (40), and wherein the reflecting means (43) and the refracting means (42) are constructed of single continuous homogeneous material (col.4, lines 56-63), and wherein the light from the light source (30) travels from the proximal end (41) to the distal end (48) without passing through any substantially air spaces (figs.4A,4B), *and wherein the light guide (40) further comprises a straight wall section (cylindrical section 46 is straight longitudinal section-wise) immediately distal to the reflecting means (43);* wherein the distal end (48) is connected to a fused fiber optic image conduit (50); wherein the reflecting means (43) and the refracting means (42) are constructed of acrylic, plastic or glass (col.4, lines 56-57); wherein the light source (30) is selected from a group consisting of at least of LED (col.4, lines 51-55); wherein the light source (30) is a single LED (col.4, line 43) inherently consisting of die or emitter; wherein the light source (30) comprises a domed lens cover (fig.3).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 25-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over BIANCHETTI et al (US 6,857,873 B2) in view of KOVAC et al (US 6,200,134 B1).

13. Claims 25-28 and 32 recite the light source being a multiple LED and not including a domed lens cover, not disclosed by BIANCHETTI. KOVAC teaches a dental curing device having an LED array of dies (43 in fig. 2, 60 in fig.4) and without any domed lens cover (figs.2 & 4) in contrast to domed covered and much fewer LEDs (30-fig.1) for the purpose of having increased density of light emitters within a compact space in directing light of adequate or increased curing power into the input (66) of the light pipe (67) toward the dental area to be cured, while maintaining relative adequate cooling (col.7, lines 29-67 and col.8, lines 31-34).

14. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dental curing device of BIANCHETTI et al to include the type of array of dome-less light emitting dies as taught by KOVAC et al in order to increase light intensity with a greater number and density of light emitters within the desired compactness of the device, while provide adequate or increased curing power output from the light guide, and maintain adequate cooling from the dies' convective exposure.

***Allowable Subject Matter***

15. Claim 4 is allowed. Reason statement is as stated in prior Office Action of August 29, 2006.

***Response to Arguments***

16. In regards to claim 2, applicant argues that Bianchetti fails to teach where in the components of the light guide are constructed of single homogeneous continuous material, that in Bianchetti, light pipe 50 is a completely separate material from optical conveyor 40, that the Office Action refers to the second tapered portion 45 constitutes a light pipe but not sized to be placed inside a patient's mouth, nor is the conveyor 40 being enclosed by cover is not designed to be place inside a patient's mouth. In response to applicant's argument, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It would appear that the dental lighting device of Bianchetti having a conveyor being of one light guiding material inherently single homogeneous and continuous including a tapered portion 45 or cylindrical portion 46 which adequately meets the claimed light pipe structure with distal end (48,49) with or without the cover 6 or optical fiber 50, is capable of being place inside a patient's mouth in directing light therein.

17. In regards to claims 19 and 22, applicant argues that Bianchetti fails to teach a light guide, where immediately distal to the concave reflecting means is a straight wall section. As set forth above, this is not clearly described of what is intended to be nor



limitation of a "straight wall section immediately distal to the reflecting means" under USC 112, but possibly derived from the illustration in reference to longitudinal section of the light guide being straight, at least, immediately distal to the reflecting means. As best understood, this claimed feature is adequately disclosed by Bianchetti as set forth in the above rejection of these claims.

18. In regards to claims 25-28 and 32, applicant argues that there is no motivation to modify the dental light curing device of Bianchetti to include multiple LEDs of Kovac, evidenced by Bianchetti's specific design for a single LED (col.3, lines 3-16) alleging that it teaches away from the claimed invention. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, to modify at least one domed LED to a greater number LED array of dies without domed lens cover is adequately suggested by Kovac (col.7, lines 29-67 and col.8, lines 31-34), namely to increase or provide suitable light intensity of curing power output because of a greater number or density of LEDs within the same space of a few domed LEDs, while without dome lenses also maintains adequate cooling for the greater number of LED array of dies.

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19. In regards to claim 38, applicant argues that Bianchetti fails to teach the distal end of the light pipe not enclosed by a housing. As set forth above, the housing limitation is considered new matter and the negative limitation appears to claim something the prior art to Bianchetti does not have, instead of what structure defines the claimed invention over the prior art. Both of these issues are unclear under USC 112 1<sup>st</sup> paragraph.

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. GILL et al (US 2004/0029069 A1) shows a curing light instrument that a light pipe (52) that is alternatively a plurality of optical fibers (paragraph 45). BURSTEIN (US 6,406,293 B1) shows a metal adaptor (24) securely coupling an optical wand (30) to a light source reflector assembly (20,18).

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Cariaso whose telephone number is (571) 272-2366. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Lee can be reached on (571) 272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alan Cariaso  
Primary Examiner  
Art Unit 2885



January 31, 2007  
AC